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REMARKS

In the Non-Final Office Action of May 31, 2005, claims 1-29 are pending. Claims 1-5 and 8-9 are independent claims from which all other claims depend therefrom. Claims 1, 2, 6 and 7 stand allowed. Claims 10-12 are herein canceled. Claims 4-5, 8-9, 13-15, 17-22, 25-27 are herein amended.

Claims 10-12 stand rejected under 35 U.S.C. 102(b) as being anticipated by Rogers et al. (U.S. Pat. No. 6,215,852). Claims 10-12 are herein canceled.

Claims 3, 13-17, 21-24, and 27-29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Lu et al. (U.S. Pat. No. 6,430,263).

Claim 3 recites the limitations of an electron collector body that is thermally coupled to an x-ray tube window. The electron collector body includes a coolant circuit with a coolant inlet and a coolant outlet and a thermal exchange device. The thermal exchange device is coupled to the coolant circuit. The thermal exchange device is contained within the electron collector body and a portion thereof is curved.

The Office Action states that Rogers fails to teach a thermal exchange device coupled to a coolant circuit and contained within an electron collector body. Applicants agree. However, the Office Action states that Lu teaches a thermal exchange device that is contained within a cooling circuit. Applicants submit that the thermal exchange device claimed is within an electron collector body, which is different than a cooling circuit. The cold plate 40 of Lu is not an electron collector body. Thus, Rogers and Lu alone or in combination fail to teach or suggest each and every element of claim 3, therefore, claim 3 is novel, nonobvious, and is in a condition for allowance.

Since claims 13-17, 21-24, and 27-29 depend from allowed claims 1-2, now allowable claim 3, and claims 4-5 and 8-9 for which Applicants below provide arguments for the allowability thereof, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claim 25 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Marechal.

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Applicants submit that since claims 1-5 and 8-9 are either allowed or are now allowable, that claim 25 is also novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Also, Applicants have submitted that Marechal is nonanalogous art. Referring to MPEP 2141.01(a), while the Patent Office classification of references and cross-references in the official search notes are some evidence of "nonanalogy" or "analogy" respectively, the court has found "the similarities and differences in structure and function of the inventions to carry far greater weight." *In re Ellis*, 476 F.2d 1370, 1372, 177USPQ526, 527 (CCPA 1973). Marechal would not have logically commended itself to an inventor's attention in considering the problems solved by the assembly of claim 25. In developing an x-ray tube cooling assembly, one would clearly not look to a heat exchanger for an automotive vehicle. Marechal is directed to the efficiency of an automotive vehicle heat exchanger. Although Marechal discloses a heat exchanger having flexible tubes that are 1-4mm in diameter, Marechal does not provide or describe an x-ray system or assembly, nor does Marechal describe or disclose components or devices that may be used within an x-ray system or assembly. The heat exchanger tubes of Marechal are not applicable to an x-ray tube window cooling assembly. The heat exchanger of Marechal would not have logically commended itself to the Applicant's attention in solving the problems associated with an x-ray tube assembly. Marechal would not be reasonably pertinent to the particular problems solved by the assembly of claim 25.

Claims 4-5, 8-9, 18-20, and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Gershuni et al. (U.S. Pat. No. 4,976,113).

Claims 4 and 5 recite the limitations of an electron collector body having a thermal exchange device that is coupled to a coolant circuit and has a coolant circulating therethrough. Claim 4 also recites the limitation of the thermal exchange device including a finless porous body. Claim 5 also recites the

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limitation of the thermal exchange device including a phase change material. The Office Action states that the above limitations are not taught by Rogers. Applicants agree. However, the Office Action states that Gershuni teaches a cooling circuit having a finless porous body or phase change device.

Claims 8-9, 18-20, and 26 have similar limitations as that of claims 4-5.

Although Gershuni discloses a porous solid 6, Gershuni fails to teach or suggest a thermal exchange device that is configured and coupled to a coolant circuit to reduce temperature and allow for the flow of a coolant circulating through the thermal exchange device. The porous solid 6 is configured to soak up or slowly transfer water from the tray 14 to the ducts 7, 8. The porous solid 6 does not allow for the flow of the water through the shell 1.

In addition, Gershuni fails to teach or suggest a phase change material. As defined in paragraph [0071] of the specification of the present application, a "phase change material" refers to a material that can store and release large quantities of thermal energy without a significant amount of volume change. Gershuni states that the porous solid may be filled with sand or glass beads. It is not clear whether sand or glass beads provide the properties stated. Nowhere in Gershuni is the term "phase change" stated. Also, in an x-ray system it would be preferred that such granular elements mentioned not be used. The use of granular elements, such as those mentioned above, introduces the undesirable potential for such element entering the vacuum chamber of an x-ray tube, which would degrade x-ray tube performance.

Also, Applicants believe that Gershuni is nonanalogous art. Referring again to MPEP 2141.01(a), Gershuni would not have logically commended itself to an inventor's attention in considering the problems solved by the assemblies of claims 4-5, 8-9, 18-20, and 26. In developing an x-ray tube cooling assembly for an x-ray tube window, one would clearly not look to an apparatus for gas cooling of residential, production premises, and transportation vehicle air conditioning systems. Gershuni is directed to the cooling of air within an air conditioning system not to the cooling of an x-ray tube or any components

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thereof. The use of the granular elements mentioned above also supports the argument that Gershuni is nonanalogous art, since such elements may be used in the application of Gershuni, but would be desirable in the applications of the present invention. Although Gershuni discloses a porous solid that is used to transfer thermal energy, the porous solid is used to cool air within an air conditioning system and is not configured to allow for the flow of a coolant therethrough. Also, the porous body is not configured to allow for a coolant, that would be used within an x-ray tube, to flow therethrough. The apparatus of Gershuni would not have logically commended itself to the Applicant's attention in solving the problems associated with x-ray tube cooling. Gershuni would not be reasonably pertinent to the particular problems solved by the assemblies of claim 4-5, 8-9, 18-20, and 26.

Thus, claims 4-5, 8-9, 18-20, and 26 are novel, nonobvious, and are in a condition for allowance for the above-stated reasons. Note that claims 8 and 9 are herein amended to further differentiate them from Rogers and Gershuni. However, Applicants believe that since Gershuni is nonanalogous art and since Rogers fails to teach or suggest each and every element of claims 8-9, that claims 8 and 9 were novel, nonobvious, and in a condition for allowance prior to the amendments contained herein.

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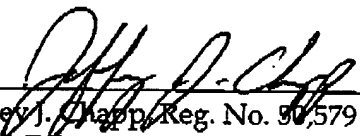
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In light of the amendments and remarks, Applicants submit that all the rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

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